



Safety Data Sheet

Conforms to 1907/2006/EC

Version 3

Issue date 10-8-2009

Granular2						
1 Identification of the substance/preparation and of the company/undertaking						
	Commercial product name	Granular2				
	Common chemical name	Ammonium sulphate				
	Synonyms	Sulphate of ammonia; Sulphate of ammonia 21 (+24)				
	Chemical formula	(NH4)2SO4				
	Use of the substance/preparation	EC FERTILISER				
	EU category number					
	Company name	DSM Agro B.V.				
	Company address	P.O. Box 601 6160 AP Geleen The Netherlands				
	Company telephone	(31) 46 476 00 55				
	Company e-mail	dsm.agro@dsm.com				
	Emergency telephone	(31) 46 476 55 55		24/24 hours	7/7 days	
2 Hazards identification						
	Physical/chemical hazards	Based on the available data of this product no hazardous properties are known.				
	Environmental hazards	Harmful to aquatic organisms.				
	Effect(s) of (over)exposure					
	Symptom(s) of (over)exposure	Dust may cause mechanical irritation. May be harmful if swallowed. Coughing. Sore throat . shortness of breath/breathing difficulty				
	Inhalation	May be mildly irritating. Coughing. Sore throat . shortness of breath/breathing difficulty				
	Ingestion	May be harmful if swallowed. Nausea, vomiting, diarrhoea.				
	Skin contact	May be mildly irritating.				
	Eye contact	May cause eye irritation. (redness).				
3 Composition/information on ingredients						
	Chemical name	CAS no.	EC no.	% (w/w)	Symbol	R phrases
	Ammonium sulphate	7783-20-2	231-984-1	100	-	-
	<i>EC no. means EINECS or ELINCS number.</i>					
4 First aid measures						
	General	Move exposed person to fresh air.				
	Inhalation	If inhaled, remove to fresh air. Obtain medical attention if symptoms occur.				
	Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Obtain medical attention if symptoms occur.				
	Skin contact	Rinse with plenty of running water. Remove contaminated clothing and shoes. Obtain medical attention if symptoms occur.				
	Eye contact	Rinse with plenty of running water. Obtain medical attention if symptoms occur.				
	Note to physician					

5	Fire-fighting measures	
	Extinguishing media	
	Small fire	Non-combustible. Use extinguishing media suitable for surrounding materials.
	Large fire	Non-combustible. Use extinguishing media suitable for surrounding materials.
	Extinguishing media not to be used	
	Unusual fire and explosion hazards	No specific hazard.
	Hazardous thermal decomposition and combustion products	In case of fire, may produce hazardous decomposition products such as nitrogen oxides (NO, NO ₂), ammonia (NH ₃), amines, sulphur oxides (SO ₂ , SO ₃).
	Special fire fighting procedures	Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Wear suitable protective clothing. Self-contained breathing apparatus.
6	Accidental release measures	
	Personal precautions	Avoid creating dusty conditions and prevent wind dispersal. Use suitable protective equipment (section 8).
	Environmental precautions	Prevent entry into sewers, basements or confined areas. Dyke if necessary. In case of contamination of aquatic environment, inform local authorities.
	Methods for cleaning up	
	Small spill and leak	Vacuum or sweep up material and place in a designated labelled waste container. Clean up affected area with a large amount of water.
	Large spill and leak	Prevent entry into sewers, basements or confined areas. Dyke if necessary. Vacuum or sweep up material and place in a designated labelled waste container. Recycle, if possible. Prevent formation of dust clouds. Avoid release to the environment. This material and its container must be disposed of as hazardous waste
	Remarks	
	<i>Note: see section 8 for personal protective equipment and section 13 for waste disposal.</i>	
7	Handling and storage	
	Handling	Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal. Do not allow to enter drains or watercourses.
	Storage	Use appropriate containment to avoid environmental contamination. Keep container tightly closed. Segregate from oxidising materials. Store away from bases, metals.
	Specific use(s)	
	Packaging materials	Stainless steel. Synthetic materia
	<i>Note: See section 10 for stability and reactivity</i>	
8	Exposure controls / Personal protection	
	Exposure limit values	
	Engineering measures	None required. However, use of adequate ventilation is good industrial practice.
	Hygienic measures	When using do not eat, drink or smoke. Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.
	Personal protection	Production scale
	Respiratory system	Wear dust protection mask P2.
	Skin and body	Working clothes.
	Hands	Wear suitable gloves. 4-8 hours (breakthrough time): Butyl rubber. PVC.
	Eyes	Safety glasses with side shields.
	Environmental exposure controls	
	<i>Advice on personal protection is applicable for high exposure levels.</i>	
	<i>Select proper personal protection based on a risk</i>	
9	Physical and chemical properties	
	Appearance	Solid. (Granular)
	Color	White
	Odor	Odourless.
	Odor threshold	
	Molecular weight	132.16

	<p>pH</p> <p>Boiling point</p> <p>Melting point/ range</p> <p>Flash point</p> <p>Flammability</p> <p>Autoignition temperature</p> <p>Decomposition temperature</p> <p>Lower explosion limit</p> <p>Upper explosion limit</p> <p>Minimum ignition energy</p> <p>Critical temperature</p> <p>Relative density</p> <p>Density</p> <p>Loose bulk density</p> <p>Vapour pressure at 20°C</p> <p>Vapour density</p> <p>Partition coefficient n-octanol/water</p> <p>Viscosity</p> <p>Mean particle size</p> <p>Solubility in water</p> <p>Miscibility</p> <p>Fat solubility</p> <p>Conductivity</p> <p>Gas group</p> <p>Remarks</p>	<p>5 to 6 (Concentration 5%)</p> <p>Not applicable.</p> <p>Decomposes. >235 °C</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>1.78 g/cm³ (20°C)</p> <p>1040 kg/m³</p> <p></p> <p></p> <p></p> <p>2,0 +/- 0,3 mm</p> <p>76 g/100 ml (20°C) Easily soluble in cold water</p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>																														
10 Stability and reactivity																																
	<p>Stability</p> <p>Conditions to avoid</p> <p>Materials to avoid</p> <p>Hazardous decomposition products</p>	<p>Stable under recommended storage and handling conditions (see section 7).</p> <p>Exposure to sources of heat.</p> <p>Oxidizing substances and bases.</p> <p>In case of fire: see section 5.</p>																														
11 Toxicological information																																
	<p>Acute toxicity</p> <table border="1"> <thead> <tr> <th>Ingredient name</th> <th>Test</th> <th>Species</th> <th>Route</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td rowspan="6">Ammoniumsulfaat</td> <td>LD₅₀</td> <td>Rat</td> <td>Oral</td> <td>2840 mg/kg</td> </tr> <tr> <td>LD₅₀</td> <td>Rat</td> <td>Oral</td> <td>4540 mg/kg</td> </tr> <tr> <td>LD₅₀</td> <td>Mouse</td> <td>Oral</td> <td>640 mg/kg</td> </tr> <tr> <td>LD₅₀</td> <td>Rat</td> <td>Dermal</td> <td>>2000 mg/kg</td> </tr> <tr> <td>LD_{Lo}</td> <td>Domestic animals</td> <td>Oral</td> <td>3500 mg/kg</td> </tr> <tr> <td>LC₅₀</td> <td>Rat</td> <td>Inhalation</td> <td>>1000 mg/m³ (8hours)</td> </tr> </tbody> </table> <p>Irritation</p> <p>Sensitization</p> <p>Chronic toxicity</p> <p>Carcinogenicity</p> <p>Mutagenicity</p> <p>Reproductive toxicity</p> <p>Remarks</p>	Ingredient name	Test	Species	Route	Result	Ammoniumsulfaat	LD ₅₀	Rat	Oral	2840 mg/kg	LD ₅₀	Rat	Oral	4540 mg/kg	LD ₅₀	Mouse	Oral	640 mg/kg	LD ₅₀	Rat	Dermal	>2000 mg/kg	LD _{Lo}	Domestic animals	Oral	3500 mg/kg	LC ₅₀	Rat	Inhalation	>1000 mg/m ³ (8hours)	<p>May be mildly irritating.</p> <p>Non-mutagenic for bacteria and/or yeast.</p> <p>The following applies to ammonium salts in general: After swallowing: nausea, vomiting, diarrhoea. Systemic effects: After intake of large quantities: drop in blood pressure, collapse, CNS disorders, respiratory paralysis, narcosis, haemolysis.</p>
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Ammoniumsulfaat	LD ₅₀	Rat	Oral	2840 mg/kg																												
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12 Ecological information						
Ingredient name	Aquatic half-life	Photolysis	Biodegradability			
Ammonium sulphate	-	-	readily			
Ingredient name	Test	Period	Result			
Ammonium sulphate	Oncorhynchus mykiss (LC50)	96 hours	6.6 mg/l			
	Daphnia magna (LC50)	96 hours	>20 mg/l			
	Pimephales promelas (LC50)	96 hours	>20 mg/l			
	Oncorhynchus mykiss (LC50)	96 hours	36.7 mg/l			
	Oncorhynchus mykiss (LC50)	96 hours	39.2 mg/l			
Ingredient name	LogPow	Bio-concentration factor	Bioaccumulative potential			
Ammonium sulphate	-5,1	-	low			
Mobility	For data on physical state and : solubility see section 9.					
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.					
Bioaccumulative potential						
Ecotoxicity						
13 Disposal considerations						
Responsibility of the receiver to have knowledge of national and local regulations.						
Methods of disposal	Waste must be disposed of in accordance with national and local environmental regulations. Controlled biodegradation in waste water treatment is possible.					
14 Transport information						
Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Class	Not regulated.	Sulphate of ammonia 21 (+24)	-	-		-
ADNR Class	Not regulated.	Sulphate of ammonia 21 (+24)	-	-		-
IMDG Class	Not regulated.	Sulphate of ammonia 21 (+24)	-	-		-
IATA Class	Not regulated.	Sulphate of ammonia 21 (+24)	-	-		-

15	Regulatory information	
Responsibility of the receiver to have knowledge of national and local regulations.		
EU regulations	EC FERTILISER	
Hazard symbol	According to EU Directives 67/548/EEC and 1999/45/EC this product does not require labelling.	
R- and S phrases	According to EU Directives 67/548/EEC and 1999/45/EC this product does not require labelling.	
National Fire protection Association (U.S.A)	none	
16	Other information	
Risk phrases	-	
Safety phrases	-	
Symbols	-	
Storage classification	-	
Date previous SDS	18-9-2007	
Modifications in this version	Adress change	
References	DSM: WW15261	
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